

Original Article

Comparison of Unintended Pregnancy Rates between OCP and Injectable Contraceptive Users; A Prospective Cohort Study in Bahawalpur

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Abstract

Objective: To compare the rates of unintended pregnancies, adherence, and contraceptive usage patterns between oral contraceptive pill (OCP) users and injectable contraceptive users in Bahawalpur, Pakistan.

Methodology: A Prospective cohort study was conducted at family planning clinics from June 2022 to May 2023 on 400 women aged 20 to 45 years using OCPs or injectable methods for at least three months. Participants were followed for one year to assess adherence, method continuation, and unintended pregnancies through regular follow-ups. SPSS version 26 was applied for data analysis.

Results: The most of the participants were aged 18-30 years and belonged to middle or poor socio-economic classes, with no significant demographic differences between the groups. Adherence was significantly higher among injectable users (82%) compared to OCP users (64%) ($p=0.001$). The unintended pregnancy rate was also significantly lower among injectable users (1.5%) than OCP users (5.5%) ($p=0.035$), and injectable users had a higher proportion of short-term use (0-6 months) compared to OCP users ($p=0.002$).

Conclusion: Injectable contraceptives observed with higher adherence and lower unintended pregnancy rates than OCPs. More efforts are required to improve adherence to OCPs through patient education and adherence-support strategies.

Keywords: Unintended pregnancies, OCP, injectable contraceptives, adherence, family planning.

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Introduction

In developing nations, maternal deaths are primarily caused by pregnancy and childbirth.¹ In this regard, family planning and contraceptive access play a vital role in lowering pregnancy-related health risks, enhancing the well-being of young girls, women, and their children, and minimizing the social and economic burdens associated with early pregnancy.¹ Throughout the world maternal and child health are badly affected with unintended pregnancies. Main strategy to avoid this condition is consistent contraceptive use. Many different types of contraceptive are available from which patient and doctor select the best method for the couple. Among these oral contraceptive pills OCP and

injectable contraceptive are most commonly prescribed and used because of compliance and effectiveness.

Oral contraceptive pills are to be taken daily and major failure of this type of contraceptive is forgetfulness by the user and thus a typical failure rate of about 9 percent is noted under typical use conditions,² compared to this injectable contraceptives like Depot medroxyprogesterone acetate DMPA, have a failure rate of 4 percent because of less frequent dosage i.e, three monthly injections.³ However important factor upon which efficacy depends is user adherence which is a cause of higher failure rates and more unintended pregnancies in Oral contraceptive pills users.⁴ Studies

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over time have stressed upon the significance of adherence to OCP regimens to ensure efficiency of the pills. Few studies have written about forgetfulness, low education and limited access to healthcare services play vital role in poor compliance associated with this method.^{5,6} In contrast to this quarterly administration of injectable contraceptives lessen the burden of daily intake and bypass the need of everyday responsibility of the pill take.⁷

According to study fifteen to fifty-one percent of users, especially teenagers, frequently forget to take one to three pills per cycle. Contributing factors to this issue include age, difficulties in establishing a routine, pill accessibility, adverse effects, lack of interest, and absence of involvement in the initial decision to use oral contraceptives.⁸ The choice and effectiveness of contraceptives methods are strongly reliant on social determinants of health. Karp et al emphasized the role of socioeconomic status and education levels in contraceptive use patterns. This finding highlights the needs for contraceptive interventions that are tailored according to the population demand and feasibility.⁹ Not only this public awareness and easy access to healthcare services specifically contraceptive methods are necessary for reduction in unintended pregnancy rates.^{10,11}

Contraceptive methods have a significant impact on reproductive health; therefore, healthcare providers must be well-informed about their effectiveness. Comparative data on oral contraceptive pills (OCPs) and injectable contraceptives can assist providers in making informed recommendations. This study offers valuable insights into unintended pregnancy rates among OCP and injectable contraceptive users in Bahawalpur, Pakistan. The findings will support healthcare providers in delivering evidence-based counseling to patients and contribute to policy development aimed at improving reproductive health outcomes.

Methodology

This prospective cohort study was conducted at the family planning clinics of Bahawal Victoria Hospital and Sadiq Abbasi Hospital in Bahawalpur. The study was carried out over one year, from June 2022 to May 2023. Women aged 20 to 45 years who were current contraceptive users of either oral contraceptive pills (OCPs) or injectable contraceptives for at least three months prior to participation were included. Women who were not using contraception, had medical or

psychiatric disorders, had a history of inconsistent contraceptive use as per prescribed guidelines, or were unwilling to participate were excluded.

After obtaining informed consent, a total of 400 women were enrolled, with equal numbers: 200 using OCPs and 200 using injectable contraceptives. Data was collected using a structured questionnaire, which included questions related to participants' demographic characteristics such as age, residential status, and socioeconomic status (SES). Additionally, information regarding contraceptive preferences, current usage, and history of unplanned pregnancies was recorded.

Participants were prospectively followed over one year to assess adherence to their chosen contraceptive methods and to document any occurrences of unintended pregnancies. Regular follow-ups were conducted at specified intervals to monitor compliance, method continuation, and challenges faced in maintaining contraceptive use. Data entry and analysis were performed using SPSS version 26.

Results

In this study OCP and injectable contraceptive users were almost similar across various demographic parameters. Majority of the participants were aged 18-30 years, belonged to the middle and poor socio-economic classes, and had primary or middle levels of education, while most of the women had parity of 3 to 4. There were no statistically significant differences between the two groups in terms of age, socio-economic status, education and parity ($p > 0.05$). (Table I)

Characteristic	OCP users (n=200)	Injectable users (n=200)	p-value
Age groups			
18-30	67%	69%	0.75
31-40	29%	30%	
>40	4%	0%	
Socio-economic Status			
Poor	43%	41%	0.55
Middle	49%	50%	
Upper	8%	9%	
Education			
No education	23%	22%	0.32
Primary	39%	35%	
Middle	26%	32%	
Secondary	12%	11%	
Parity			
Para 1 & 2	41%	36%	0.12
Para 3 & 4	56%	58%	
Para 5 and above	3%	6%	

According to the usage patterns and adherence levels of contraceptive varied between OCP and injectable users, as significantly higher proportion of injectable users (44.5%) used the method for 0-6 months compared to OCP users (21%), while more OCP users (25%) continued usage beyond 12 months compared to injectable users (9%) $p=0.001$. Additionally injectable users showed better compliance, with 82% strictly following the routine compared to 64% of OCP users. Occasional missed doses were reported by 36% of OCP users and 18% of injectable users ($p=0.002$), indicating better adherence among injectable users. (Table II)

Table II: Contraceptive usage term and adherence levels. (n=400)

Usage pattern	OCP users n=200	Injectable users n=200	P- value
Duration of use			
0-6 months	42(21%)	89(44.5%)	0.001
6-12months	108(54%)	93(46.5)	
>12 months	50(25%)	18(9%)	
Adherence level			
Adhered to the routine as advised	128(64%)	164(82%)	0.002
Missed pills/injection occasionally	72(36%)	36(18%)	

In this observation, the incidence of unintended pregnancies was higher among OCP users (5.5%) compared to injectable contraceptive users (1.5%), $p=0.035$. (Table III)

Table III: Incidence of unintended pregnancies. (n=400)

Contraceptive method	Unintended pregnancies		P-value
	Yes	No	
OCP (n=200)	11(5.5%)	189(94.5%)	0.035
Injectable Contraceptive (n=200)	3(1.5%)	197(98.5%)	

Discussion

In the following section of the study, the rates of unintended pregnancies and contraceptive usage patterns between oral contraceptive pills users and injectable users in Bahawalpur Pakistan have been evaluated. It was noticed that there were also differences in the duration of use of the controlled methods differences in the level of adherence and emergence of unintended pregnancies between OCP group and injection group. As highlighted in the study, out of the total, Sixty four percent of OCP (Oral contraceptive pill) users of the sample have OCPs daily regimen compared to 82% injectable contraceptives

users who reportedly adheres to the injection times. This is consistent with prior studies that indicate that injectable contraceptives have a higher proportion of adherents than oral ones as these are administered less regularly compared to OCP which is administered on a daily basis.¹² The possibility of injectable or long acting contraceptives causing for less doses missed is also logical as the need for frequent administrations characteristic of OCPs presents a reason as to why these pills frequently go unutilized. For some women, the adherence rates witnessed in this study are typical of women in the region, as there are intrusive factors to use such methods as OCPs as forgetfulness and lack of proper knowledge or misinformation.¹³

The current study calculated the rate of unplanned conception among oral contraceptive pill users to be 5.5% which is relatively higher than the rates of 1.5% found among users of injectable. Such findings have also been corroborated by global statistics that point out that OCP tends to have a higher failure rate than LARCs such as IUD.¹⁴ Sardar A et al also found in a similar study in South Asia that patients have also reported higher unintended pregnancy rates among OCP users compared to those using injectable methods or the implants. This reinforces the importance of targeted educational efforts aimed at improving adherence to OCP regimens.¹⁵ This study revealed that 44.5% of injectable users had been using this method for 0-6 months, compared to just 21% of OCP users. This suggests a growing preference for injectables in the region, likely due to their perceived effectiveness and lower maintenance requirements. Existing literature supports this shift, noting that many women in developing countries are opting for injectable and other LARCs due to concerns about the reliability and ease of use associated with OCPs.¹⁶

Furthermore in this study both groups had similar socioeconomic and educational backgrounds, and they did not differ with respect to any other demographic variables as well. This is all the more important since contraceptive use and compliance is known to be to a great extent governed by the socioeconomic status. There is however a need to better understand how these factors are associated with the patterns of contraceptive use in a population, as this could help shape health interventions that are tailored to specific demographic.¹⁷ Findings of the present study highlighted the need to prioritize counselling and education on OCP use, particularly strategies to enhance adherence and reduce the risk factors that

could lead to unintended pregnancies. Training should be provided to address misconceptions about contraceptive methods and emphasize the importance of consistent use. Additionally, improving the availability and accessibility of injectable contraceptives and other long-acting reversible contraceptives (LARCs) could further reduce unintended pregnancies in the region.¹⁸

In accordance to the certain limitations of the study like, it was conducted in family planning clinics, which may limit the generalizability of findings to regions with different healthcare infrastructures and cultural factors. Adherence to methods of the contraception was self-reported, potentially introducing recall bias or social desirability bias, affecting data accuracy. Additionally, the one-year follow-up period may not fully capture long-term adherence patterns or discontinuation rates. Factors influencing adherence, such as partner influence, healthcare accessibility, and side effects, were not studied. Further comprehensive research and qualitative insights are recommended to enhance the understanding of contraceptive adherence and effectiveness.

Conclusion

The study revealed that while both contraceptive methods were widely used, injectable contraceptives demonstrated higher adherence and effectiveness in preventing unintended pregnancies. Greater efforts are needed to improve adherence to OCPs through patient education and support strategies to enhance their effectiveness. However, future large-scale studies are recommended to explore the reasons for non-adherence and discontinuation in both groups to optimize counselling and intervention strategies for contraceptive methods.

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